# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/645,227 | 08/21/2003 | Hisatsugu Naito | 1232-5117 | 7139 |

| 27123      7590      05/31/2005 | EXAMINER |
|---|---|
| MORGAN & FINNEGAN, L.L.P.<br>3 WORLD FINANCIAL CENTER<br>NEW YORK, NY 10281-2101 | HUFFMAN, JULIAN D |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2853 | |

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

8m

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.          2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-7</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1 and 4-7</u> is/are rejected.

7)☒ Claim(s) <u>2 and 3</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>21 August 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>8/17/04</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date._____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

## DETAILED ACTION

### *Specification*

1.     The disclosure is objected to because of the following informalities:

The title of the invention is not descriptive.  A new title is required that is clearly

indicative of the invention to which the claims are directed.

Appropriate correction is required.

### *Claim Objections*

2.     Claims 1-7 are objected to because of the following informalities:

Claims 1-7 recite "moving a printhead on a printing medium". However, this

limitation is not clear since inkjet printing is a non-contact process. The limitation is

interpreted as moving a printhead over/across a printing medium.

Additionally, in claim 7, line 12, it is respectfully suggested that the word "to" be

inserted after the word "referring".

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.      Claims 1 and 4-7 are rejected under 35 U.S.C. 102(e) as being anticipated by

Igarashi (20030043228 A1).

Igarashi and applicant's invention solve the same problem of preventing errors

during control of a carriage motor which result from erroneous encoder position data.

This data is the result of unstable encoder output signals when the carriage motor

beings to move (see section 0008). Both inventions use an estimated speed during an

initial movement time interval to correct the erroneous data. After the initial time interval,

both inventions resume normal feedback control.

Igarashi discloses a printing apparatus (fig. 1, element 20) and method for

controlling a printing apparatus, which prints by relatively moving a printhead (52)

over/across a printing medium (P), comprising:

control means (fig. 3, element 200) for/step of feedback-controlling a carrier (figs.

1 and 2, element 50) supporting the printhead (52) by using an ideal speed (Vt) and an

ideal position (Pt, section 0046);

carrier position detecting means for (fig. 2, element 70)/step of detecting carrier

position information to be referred to by said control means/in the control step (0036,

0037, 0046);

carrier speed detection means (232) for/step of detecting carrier speed information to be referred to by said control means/in the control step (0039); and

speed estimation means (206) for/step of calculating an estimated speed at a predetermined ratio by using the ideal speed referred to by said control means/in the control step (0047). Igarashi calculates a differential between a target/ideal speed Vt and an actual speed Vc using the formula C(Vt-Vc), wherein C is a predetermined coefficient. This speed differential is equivalent to an estimated speed calculated using an ideal speed, since, referring again to the equation C(Vt-Vc), it is a speed value which is estimated based on the target/ideal speed Vt. The speed is calculated at a predetermined ratio since the constant C is equivalent to a number expressed as a ratio. For example, if the constant is 1, the value of 1 may also be expressed as a ratio, 1/1, and both values are equivalent. By using this estimated speed differential, Igarashi similarly corrects for unstable encoder data during initial motor movement (section 0008).

With regards to claim 4, Igarashi discloses that an independent value can be selected for each ideal speed as the predetermined ratio used for calculation by said speed estimation means, since the constant C is an independent selected value which may also be equivalently expressed as a ratio of two values.

With regards to claim 5, Igarashi discloses that the predetermined ratio used for calculation by said speed estimation means is set to a value which makes a difference between the estimated speed or the carrier speed information and the ideal speed fall within a predetermined range, since Igarashi discloses the structure and applicant has

not further claimed what the predetermined range is. For example, a range of 0 to

infinity reads on the claim language.

With regards to claim 7, Igarashi discloses a printing apparatus (fig. 1, element

20) which prints by relatively moving a carrier (50) supporting a printhead (52) on a

printing medium (P), comprising:

encoder means (fig. 2, element 70) for detecting carrier speed information and

carrier position information (0036);

control means (fig. 3, element 200) for feedback controlling the carrier by using a

predetermined speed profile (0046); and

storing means (232, 206) for storing speed information corresponding to moving

amount of the carrier (0039, 0040),

wherein said control means feedback-controls the carrier by using the speed

information stored in the storing means without referring the speed information detected

by the encoder means until the carrier moves in a predetermined moving amount from

the start of movement (0047, 0048), and feedback-controls the carrier by using the

speed information detected by the encoder means after the moving amount of the

carrier becomes greater than the predetermined moving amount (0050).


### Allowable Subject Matter

5.      Claims 2 and 3 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

The primary reason for the indication of allowability for claims 2 and 3 is the inclusion of the limitations of a printing apparatus including speed estimation means for calculating an estimated speed at a predetermined ratio by using the ideal speed and control means which does not refer to, as speed information used for the feedback control, the carrier speed information detected by said carrier speed detection means. It is these limitations found in claims 2 and 3, as they are claimed in the combination of, that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

In Igarashi, three embodiments of estimating speed differential are disclosed. The speed differential is either (1) a constant value, (2) calculated using the formula $C(Vt-Vc)$, or (3) a value which changes smoothly from a constant value to the actual speed differential $(Vt-Vc)$. In the only embodiment which estimates speed using the ideal speed (the second embodiment discussed above), the actual speed $Vc$ is also used in the calculation. Therefore, Igarashi does not disclose, teach or suggest the combination of the speed estimation means for calculating an estimated speed at a predetermined ratio by using the ideal speed and control means which does not refer to, as speed information used for the feedback control, the carrier speed information detected by said carrier speed detection means.

## *Conclusion*

6.      Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH
25 May 2005

K. FEGGINS
PRIMARY EXAMINER